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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,968	04/15/2004	Alexander T. Garthwaite	33226980001; P8304	7446
33615 7590 06/27/2008 OSHA LIANG I.L.P./SUN 1221 MCKINNEY, SUITE 2800 HOUSTON, TX 77010				
EXAMINER HOTTLE, RAHEEM				
ART UNIT 2165		PAPER NUMBER		
NOTIFICATION DATE 06/27/2008		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

lord@oshaliang.com
DOCKETING@OSHALIANG.COM
hathaway@oshaliang.com

Office Action Summary

Application No.

10/824,968

Applicant(s)

GARTHWAITE, ALEXANDER T.

Examiner

RAHEEM HOFFLER

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 41, 44-49 & 52-57 is/are rejected.
- 7) ☒ Claim(s) 42, 43, 50 and 51 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/25/2008
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Detailed Action

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 25 January 2008 has been entered.

Allowable Subject Matter

The indicated allowability of claims 41, 44-48 and 52-57 is withdrawn in view of the newly discovered reference(s) to Garthwaite et al (US Patent No. 6434576. Rejections based on the newly cited reference(s) follow.

Claims 42, 43, 50 & 51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 57 of the claimed invention is directed to non-statutory subject matter. Claim 57 is an apparatus claim utilizing the means for function, but fails to include any type of hardware as

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a means for carrying out the 'obtaining', partitioning', and 'identifying' functions. Thus, claim 57 is considered software, *per se*.

Software, *per se*:

The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." Both types of "descriptive material" are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)

Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.").

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 57 is vague and indefinite because the steps in the body of the claim recite the limitation of "means for..." which has been reasonably construed as the attempt by Applicant to invoke 35 U.S.C. 112, sixth paragraph. However, the metes and bounds of the claim have not been specifically defined for the limitation of "means for..." in the specification. The instant disclosure does not define the structures necessary for each "means for 35 U.S.C. 112, sixth paragraph states that a claim limitation expressed in means-plus-function language "shall be construed to cover the corresponding structure...described in the specification and equivalents thereof." "If one employs means plus function language in a claim, one must set forth in the

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specification an adequate disclosure showing what is meant by that language. If an applicant fails to set forth an adequate disclosure, the applicant has in effect failed to particularly point out and distinctly claim the invention as required by the second paragraph of section 112." In re Donaldson Co., 16 F.3d 1189, 1195, 29 USPQ2d 1845, 1850 (Fed. Cir. 1994) (in banc). (See MPEP 2181 [R-2]).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 41 is rejected under 35 U.S.C. 102(b) as being anticipated by Garthwaite et al (US Patent No. 6434576; Garthwaite hereinafter).

As for Claim 41, Garthwaite teaches,

"obtaining a collection set of objects in a computer system, wherein the collection set is associated with a collector interval of a collection cycle (see col. 13, lines 40-60; e.g., obtaining objects associated with a collection cycle);

partitioning the collection set of objects into a plurality of sections, wherein a section of the plurality of sections is associated with a remembered set (see col. 15, lines 52-65; col. 17, lines 43-67; col. 18, lines 1-15; e.g., partitioning/dividing associated with remembered sets);

partitioning the section into a plurality of segments (see col. 23, lines 54-65; col. 24, lines 21-36; e.g., memory space divided into segments);

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obtaining a first count-map for the section, wherein the first count-map is associated with a first thread, and wherein a first entry in the first count-map is associated with a first segment of the plurality of segments (see col. 7, lines 16-46; col. 8, lines 41-65; col. 15, lines 35-50);

identifying a first plurality of references to objects in the first segment using the remembered set (see col. 5, lines 49-65; col. 17, lines 62-67; col. 18, lines 1-15; e.g., identifying references);

incrementing the first entry based on a size of the first plurality of references (see col. 19, lines 19-32);

comparing the first entry with a popular-object threshold to generate a first comparison (see col. 13, lines 40-60; col. 17, lines 53-61; col. 22, lines 50-59; col. 26, lines 11-20; e.g., threshold);

and evacuating a first object from the first segment based on the first comparison to reclaim memory of the computer system for reuse (see col. 5, lines 64-67; col. 6, lines 1-9; col. 19, lines 19-32, 50-61; e.g., evacuating/ reclamation).

As for Claim 44, Garthwaite et al teaches, "adding a new section to the plurality of sections and placing the first object in the new section, wherein the new section is exclusively occupied by the first object" (see col. 23, lines 54-65; col. 24, lines 21-36; e.g., memory space divided into segments).

As for Claim 45, Garthwaite et al teaches, "adding a new section to the plurality of sections and placing the second object in the new section, wherein the new section is

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exclusively occupied by the second object" (see col. 23, lines 54-65; col. 24, lines 21-36; e.g., memory space divided into segments).

As for Claim 46, Garthwaite teaches, "the popular-object threshold is an individual-map threshold" (see col. 13, lines 40-60; col. 17, lines 53-61; col. 22, lines 50-59; col. 26, lines 11-20; e.g., threshold).

As for Claim 47, Garthwaite teaches, "the popular-object threshold is a multiple-map threshold" (see col. 13, lines 40-60; col. 17, lines 53-61; col. 22, lines 50-59; col. 26, lines 11-20; e.g., threshold).

As for Claim 48, Garthwaite et al teaches, "at least one of the plurality of segments is smaller than a minimum object size" (see col. 5, lines 64-67; col. 6, lines 1-9; col. 19, lines 19-32, 50-61; e.g., evacuating/ reclamation).

Claims 52-56 differ from Claims 44-48 in that claims 52-56 are apparatus whereas claims 44-48 are method claims. Thus, claims 52-56 are analyzed as previously discussed with respect to claims 44-48 above.

Claim 57 differs from Claims 41 & 49 in that claim 57 is an apparatus whereas claim 41 is a method claim and claim 49 is a computer readable medium claim. Thus, claim 57 is analyzed as previously discussed with respect to claims 41 & 49 above.

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Conclusion

The prior art made of reference and not relied upon is considered pertinent to Applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAHEEM HOFFLER whose telephone number is (571)270-1036. The examiner can normally be reached on 7:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christian Chace can be reached on (571) 272-4190. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. H./

Examiner, Art Unit 2165

/H. Q. P./

Primary Examiner, Art Unit 2168

/Christian P. Chace/

Supervisory Patent Examiner, Art Unit 2165